US 20110295782A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2011/0295782 A1

(43) Pub. Date: Dec. 1, 2011

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(54) CLINICAL DECISION MODEL

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(21) Appl. No.: **13/123,406**

(22) PCT Filed: **Oct. 15, 2009**

(86) PCT No.: **PCT/US2009/060850**

§ 371 (c)(1), (2), (4) Date: **Jul. 5, 2011**

Related U.S. Application Data

(60) Provisional application No. 61/105,786, filed on Oct. 15, 2008, provisional application No. 61/166,245, filed on Apr. 2, 2009.

Publication Classification

(51) **Int. Cl.**
G06F 15/18 (2006.01)

(52) **U.S. Cl.** **706/12**

(57) **ABSTRACT**

An embodiment of the invention provides a method for determining a patient-specific probability of disease. The method collects clinical parameters from a plurality of patients to create a training database. A fully unsupervised Bayesian Belief Network model is created using data from the training database; and, the fully unsupervised Bayesian Belief Network is validated. Clinical parameters are collected from an individual patient; and, such clinical parameters are input into the fully unsupervised Bayesian Belief Network model via a graphical user interface. The patient-specific probability of disease is output from the fully unsupervised Bayesian Belief Network model and sent to the graphical user interface for use by a clinician in pre-operative planning. The fully unsupervised Bayesian Belief Network model is updated using the clinical parameters from the individual patient and the patient-specific probability of disease.